

# Lyme Disease in California



## ***WHAT IS LYME DISEASE?***

Lyme disease (*Lyme Borreliosis*) is a preventable bacterial disease transmitted to humans and animals by the bite of a Western Black-legged tick. It may be cured by early diagnosis and appropriate antibiotic treatment, but it may persist in the human body for years if not properly treated. The natural history of this disease is not completely understood, and the illness it produces in humans can be difficult to diagnose because of the varied symptoms.

Lyme disease was named for Old Lyme, Connecticut, with the first cases reported in California in 1978. It is the most common tick-borne disease in California, as well as in the United States.

## ***IF I AM BITTEN BY A TICK, WILL I GET LYME DISEASE?***

Only about 1-2% of the adult Western Black-legged ticks in California area infected with the bacterium that causes Lyme disease, and immature ticks have even lower infection rates. In some areas north of the Bay Area the adults may be infected up to 5%; this is still much lower than the northeastern U.S. where 30-60% or more of the adult ticks are infected. Evidence indicates the bacterium is probably not transmitted to humans until the tick has fed at least several hours.

## ***WHAT SHOULD I DO IF I AM BITTEN BY A TICK?***

SINCE IT USUALLY TAKES MORE THAN A DAY FOR THE TICK TO FEED, PROMPT REMOVAL OF TICKS SHOULD PREVENT DISEASE TRANSMISSION.

1. Grasp the tick with a tissue or tweezers, (NEVER WITH YOUR BARE HANDS!) as close to your skin as possible. If ticks are crushed with bare fingers, exposure to the tick body fluids may lead to transmission of the disease organisms.
2. GENTLY pull the tick from the skin. DO NOT TWIST OR “UNSCREW” THE TICK. DO NOT ATTEMPT TO REMOVE BY BURNING WITH CIGARETTE OR BY APPLYING VASELINE, KEROSENE, ETC.
3. Apply an antiseptic to the bite area after removing the tick. Wash your hands with soap and water.
4. SAVE THE TICK FOR IDENTIFICATION! Contact the San Bernardino County Vector Control Program to determine if the tick is the one capable of transmitting Lyme disease.
5. If the tick cannot be removed or part of it is left in the skin, consult your physician.

## ***WHAT SHOULD I DO IF I THINK I HAVE LYME DISEASE?***

Early recognition is very important. If you have found a tick attached to your skin, or you were in an area where ticks are known to occur, and you have any of the symptoms listed in this pamphlet, tell your physician immediately of your suspicions and save the tick. This information should help your physician make a diagnosis. This may be especially important for pregnant women. If you have developed a rash, take a picture of it for possible future reference.

## ***WHAT ARE THE SYMPTOMS AND SIGNS OF LYME DISEASE?***

An early sign of Lyme disease may include a spreading rash which may be accompanied by flu-like symptoms, fever, aches and/or fatigue. Possible complications of the heart and/or nervous system may occur as well as joint pain. The disease commonly has three stages, but these stages may not all occur or they may overlap.

### **Stage 1**

The first recognizable sign usually is a slowly enlarging red rash, known as erythema migrans (EM), about the size of a half dollar or larger. The rash occurs 3-30 days (average 7-9 days) after the bite of an infected tick. The rash expands over a period of days or weeks to form a large circular lesion, often with a central clearing. This occurs in only about 60% or less of infected persons. One or more rashes may appear on the body.

Flu-like symptoms may also occur in this stage. These symptoms may persist, change, disappear and reappear intermittently for several weeks.

A tick bite will often be followed by a local reaction within hours creating a redness which does not expand and disappears within a couple of days. This must not be confused with Lyme disease.

### **Stage 2**

During this stage, patients may experience migratory pain in joints, tendons, muscles and bones, often without joint swelling or redness.

Some infected persons may develop long-term complications weeks to months after the initial symptoms. These complications may include disorders of the heart or nervous system. Abnormalities of the heart include varying degrees of heart block. Facial paralysis (Bell's palsy) and other nervous system abnormalities may occur.

### **Stage 3**

Months to years after disease onset, patients may develop joint pain that appears and disappears intermittently for several years. Large joints, especially the knees, are most affected. Lyme arthritis may become chronic, with erosion of cartilage and bone. Chronic neurologic symptoms and chronic skin conditions may also occur.

#### ***IS LYME DISEASE TREATABLE?***

Yes. Most cases of Lyme disease can be successfully treated with antibiotics, but early treatment is important.

#### ***ARE BLOOD TESTS ACCURATE IN DETECTING LYME DISEASE?***

Blood tests have been used in addition to evaluating clinical symptoms for diagnosis, but the test alone is not sufficient for diagnosis. The Centers for Disease Control are working to standardize the blood tests to ensure accurate test procedures and interpretation of the results.

The blood test should not be obtained until several weeks after the tick bite because the blood test is not very sensitive in the early phase of the disease. The test measures antibody level against the bacteria in the blood. Antibody levels can be affected by treatment medications and infection by other disease organisms which may cause the test results to be inaccurate.

#### ***WHAT DOES THE TICK LOOK LIKE?***

In California, the Western Black-legged tick (*Ixodes pacificus*) is the major carrier of Lyme disease. The adult female is reddish-brown with black legs, about 1/8 of an inch long; males are smaller and entirely brownish-black. Ticks that have taken a blood meal (called engorged) will appear much larger, gray in color, and are the size of a pea. Ticks in the immature life stages can be as small as the head of a pin or poppy seed.

#### ***WHERE IS THE WESTERN BLACK-LEGGED TICK FOUND?***

This tick can be found on grasses and brush in rural settings which receive afternoon shade. These ticks do not like sunny, open areas. The ticks feed on deer, rabbits, lizards, mice and other animals. Ticks do not fly, jump or drop from trees. Ticks climb to the tips of vegetation, typically along animal trails or paths, and wait for animal or human host to brush against them so that they can attach themselves.

## ***IS LYME DISEASE ONLY A SUMMERTIME THREAT?***

NO! It can be contracted during any season of the year. Ticks feed at various times of the year, including winter. The adult ticks are usually seen November through April. The nymphal tick (an immature stage) is usually present early spring to late summer, peaking in mid-to-late May. Due to the smaller size of the nymphal tick and more outdoor activity by people, chances of a tick bite are increased.

## ***CAN PETS GET LYME DISEASE?***

Yes. Lyme disease has been reported in dogs, (rarely in cats), horses, cattle, as well as a number of wild animals. Symptoms may include fever, loss of appetite, arthritis, intermittent paralysis, and lack of energy. The products used for fleas will also control ticks. Check for ticks, and brush after exposure to ticks. Have your pet examined by a veterinarian if you suspect it has Lyme disease.

## ***HOW CAN I PROTECT MYSELF FROM TICK BITES?***

1. Wear long pants and long-sleeved clothing and shoes covering the toes when in the “tick country.” DON’T wear shorts, sandals, or sleeveless shirts!
2. Wear light-colored clothing so ticks can be easily seen and removed before they become attached to the skin.
3. Tuck pants into socks or boots, and shirt into pants.
4. Use insect repellent on shoes, socks, pants and shirts. Restrict the use of insect repellents to only exposed skin or clothing following label directions. **DO NOT APPLY REPELLENTS TO THE FACE.** Contrary to some advertisements there is no special formula repellents to ticks; most repellents contain the same active ingredient-DEET (N, N-diethyl-meta-toluamide).
5. Choose wide trails and walk in the center of the trail. Avoid brushy and grassy areas and off-the-trail hikes.
6. **THOROUGHLY CHECK YOURSELF AND YOUR CHILDREN FREQUENTLY FOR TICKS. YOU AND YOUR FAMILY CAN CONTINUE TO ENJOY OUR GREAT PARKS AND OPEN SPACE AREAS BY FOLLOWING THE ABOVE GUIDELINES FOR PERSONAL PROTECTION.**



For additional information, contact  
San Bernardino County  
Vector Control Program at  
1-800-44ABATE.